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ABSTRACT

The relative importance of the skill, fitness, and social objectives of physical education have always stirred debate among physical educators. The profession would have been better served, it is argued, if more time had been spent strengthening each objective rather than arguing the merits of these desirable goals. The first section of this paper discusses the reasons for a lack of consensus concerning the skill objective. These reasons include a lack of standardization of curriculum and sports skill teaching; a lack of teacher preparation; and a lack of expectations in terms of skill attainment. The second part of the paper presents a review of literature looking specifically at the role of performance in teacher training; the effect of teaching styles on motor skill learning; skill tests; motor learning studies using traditional sports or novel tasks; research regarding basic skills; and journal features on specific sports. The third section presents suggestions for criterion-referenced standards for basketball, volleyball, and tennis. (MT)

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WHATEVER HAPPENED TO THE SKILL OBJECTIVE IN PHYSICAL EDUCATION?

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Margaret Mead's (1972) autobiography, Blackberry Winter, is a delightful book, which I recommend to those of you who have not read it. Among the many interesting things she revealed about herself in the book, was her enduring love for her profession. This was illustrated most vividly when someone asked her, at age 70, what career she would choose were she just beginning. Mead responded without hesitation that she would be an anthropologist, but she went on to be very critical about some aspects of her profession, particularly the lack of practical training given to the young anthropologist.

Although I am a few years from 70, I could express those same feelings about physical education. It has been a wonderful profession and were I beginning over, I can think of no other work in which I would be happier, but, like Mead, I am also critical of the lack of practical training, particularly in the skill area, given to the young physical educator. In fact, the profession's treatment of the skill objective has long been a concern of mine, and I am very grateful to the Alliance for allowing me this opportunity to share that concern with you.

The relative importance of the skill, fitness, and social objectives of physical education have always stirred debate among professionals in the field. Perhaps our profession would have been better served if we had spent more time determining ways to strengthen each objective rather than expending so much energy debating the merits of each of these desirable goals. One common

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element, according to Sidentop (1987), of the few good physical education programs at the secondary level, which he has located in his research, is that they have something specific to offer whether it be sports, fitness, or social development. Some of of these good programs, Sidentop maintains, are multidimensional, but most are good because of their emphasis on one particular aspect of physical education. The central component of my ideal program, you may have guessed, will be the teaching of sport skills. Others may have fitness and/or social development as their central themes, but as for me give me skill!

In order to support my position for the skill objective, this paper is divided into three sections. The first section will be a discussion of the reasons for a lack of consensus concerning the skill objective, the second section will be a review of literature in the JOPERD and Research Quarterly for Exercise and Sport which has implications for the objective, and in the third section, suggestions for criterion referenced standards will be presented.

All of you here know many reasons for there being so much confusion about teaching of sport skills, but for what it is worth, here are a few of my observations.

Lack of Standardization

The profession of physical education has not given enough attention to the objective in terms of standardization. That is, what skills should be taught at the beginning, intermediate and advanced level and at what age these skills should be introduced. Every teacher, for example, should know the skills which constitute a beginning volleyball course, the teaching progression, the approximate number of lessons necessary to learn the skills and acceptable standards for accomplishing the skills.

Many teachers have no clue about any of this, and as a matter of fact, we as a profession do not provide many answers. We need more experiments similar to one conducted by the late Katherine Ley (1970) in which she emphasized only one skill, the overhead pass, to a beginning volleyball class. Physical education majors who came into the class to practice their officiating skills (remember the good old days) at the end of the quarter were appalled that only one skill had been taught, but when the majors saw how well the students could pass the ball, they were convinced the teaching strategy had been a good one. Evaluation by the students enrolled in the class also attested to the success of the method. The evaluations indicated that the students loved the class. One student's comment was typical of the class response; her statement was something to the effect that at last she had been able to experience volleyball as a team sport. In her high school volleyball classes, the game had been strictly serve and die.

More experiments of this nature need to be conducted and published. We know so very little about what I consider to be one of the foundations of our body of knowledge in physical education. For example, at the other extreme of the one skill volleyball class, a traditional beginning tennis class consists of the serve, backhand and forehand. The length of time public schools give to the tennis unit is sometimes as few as 12 lessons. It seems to me that common sense should tell us that it is impossible to learn or teach three of the most difficult sport skills in such a short period of time.

This procedure, longer units and fewer skills, has also been advocated by Taylor and Chiogioji (1987), who are with the Office of Educational Research and Improvement in Washington, D.C. In suggesting reforms needed to improve secondary physical education, they indicated that the smorgasbord approach to teaching should be abandoned and students should concentrate on a few activi-

ties so that learning for mastery could be encouraged. According to Taylor and Chiogioji, one of the most glaring weaknesses in high school physical education is that students do not learn to master the sport.

Those of you who teach swimming are aware that the American Red Cross swimming courses are excellent models for standardizing skill teaching. Criterion-referenced swimming tests are available from the beginning through advanced levels. Students enrolled in these classes, regardless of sex, size, age, color, etc... know what skills must be accomplished before going on to the next level. Of course, all swimming teachers do not adhere strictly to the Red Cross skill charts, standards certainly vary among teachers, and skills are subject to change, but the point is that there are skills for teachers and students to follow. In my view, a similar type of standardization would vastly improve skill teaching at all physical education levels. When you think about it, it is amazing that the only real attempt at standardizing the curriculum was instigated by the National College Physical Association for Men, who charged a committee chaired by William LaPorte to investigate the possibility of a national curriculum. Although the work of this committee did result in the publication of the still-used manual The Physical Education Curriculum (A National Curriculum) (1937) and the equally well known LaPorte Score Card, it made virtually no impact in terms of establishing a national physical education program.

The debate about standardizing the curriculum, however, is still around. Some of you probably heard Jewett and Lawson debate the issue at the National Convention in Cincinnati last year (1986), and the question, "Should AAHPERD attempt to develop a national curriculum in physical education," was the topic for the Issues Section of the August, 1986 JOPERD.

Nonetheless, from my perspective, this debate has remained dormant far too long. It seems to me that we as a profession should have spent much more time researching, debating and sharing ideas in an effort to standardize curriculum as well as sport skill teaching. Individual colleges and universities and AAHPERD could still make an important contribution by providing leadership in this area. If we could establish standardized programs, based on solid research, and produce teachers who were qualified and dedicated to staff such programs, the battle to keep physical education programs in the schools would be over.

Lack of Teacher Preparation

A second reason for poor skill teaching has to do with teacher preparation. Perhaps most of you would agree that many teacher preparation programs are very weak in regard to the skill aspect of the curriculum. One of the reasons is that undergraduate majors, particularly in large universities, have seen very few full-time faculty members teach activity courses. Their role models, for the most part, have been graduate teaching assistants. Granted many graduate students are excellent teachers, but the fact remains that many have never taught a day. I think about this often, don't you? Isn't it strange that we entrust to our most inexperienced teachers the very foundation of our profession--the teaching of dance, sport and fitness activities. My solution to this problem is simple. Master teachers, preferably old, full professors earning at the minimum $50,000 per year, would teach all the activity courses in colleges and universities. Graduate teaching assistants and undergraduate majors would serve as apprentices. This would dispel the myth that only the poorest paid, youngest members of the faculty are able to teach activity.

The idea of old, rich, master teachers teaching beginning activity courses is indeed intriguing. Let us pursue it a bit further. Other characteristics would be that they would know, based on their published research, exact progressions for beginning, intermediate and advanced skills in the sport in which they were expert, and in addition, would have determined the number of lessons necessary to reach established standards at the various levels. Students reaching those standards would move on to the next level; those meeting the standards to an exceptional degree would receive an "A". Other students would, of course, receive grades commensurate with their level of attainment. In other words, students would be graded on their skill development with the master teachers spending additional time and encouraging outside practice of those students with low ability. Other characteristics of the old master teachers would be that they would be warm, understanding people, loved by their students, for, among other reasons, their willingness to participate in their sport with their students. And, oh yes, all my master teachers would have been awarded national outstanding teacher of the year awards and their colleagues would acknowledge that the awards were deserved.

For those of you who would like to pursue this issue on a more serious note, I recommend an article by Hal Lawson and Lionel Pugh entitled "Six Significant Questions About Performance and Performance Courses" which appeared in the March 1981 JOPER. One of the suggestions made in the article is that students planning to major in physical education would have to present a portfolio similar to what is required of art and music majors: such a portfolio would illustrate their skill proficiency. If this could be implemented it would certainly raise the level of performance and, I believe, the level of skill teaching. In reality, however, most physical education majors are not required to meet either entry or exit performance standards and consequently

may have no sport skills themselves and no idea about teaching for this important objective. I use the analogy in my majors classes of the teachers of French who teach French without being able to speak the language. It can be done, but the results often leave much to be desired.

What I am going to say next may seem like a contradiction in terms of my belief about physical education majors and their lack of skill. It is my observation that we have done a miserable job in our undergraduate preparation programs of training majors to be able to teach in the broad categories of team sports, individual sports, aquatics, dance and fitness activities. Just as we teach the regular student too many skills in too short a time, so it is with our major students. My solution is to prepare prospective secondary physical education teachers to teach basketball, volleyball and softball. These sports are taught in our high schools and most are taught poorly. Why don't we stop fighting the teaching of these activities and, instead, prepare our majors to do a super job?

Of course, we should still strive for variety in secondary programs and ideally the emphasis at this level should be on lifetime activities, but let's fact it, unless we set performance standards for students majoring in physical education, the many unskilled majors who enter our programs are going to exit our programs unskilled. Perhaps one of the reasons they leave unskilled is because they have been exposed to too many activities and not been given adequate time to master any of them. Again, according to Sidentop (1987), good physical education programs were good in one particular category. I think we can prepare students to do a great job with the much maligned sports of volleyball, basketball and softball. I say go for it! I believe high school students would too!

According to Larry Locke (1984), the present crisis in education has produced many schemes specifically designed to reform teacher education and, in Locke's view, some of these have been thoughtful and serious responses to our critics; others he classifies as simplistic, frivolous or just opportunistic. I will leave it to your judgment to determine the category for my reforms.

Let me conclude this section with another observation by Larry Locke which appeared in the Journal of Teaching in Physical Education in 1984.

> "In physical education, the volume, range and quality of research on teaching exceeds that of research on teacher education by a substantial factor. More serious, some of the missing pieces in the data base appear to be crucial to the success of any effort at improving physical education teacher education. Consider just one example. If teachers do not accept and give priority in the cosmology of their professional values to the proposition that a teacher's primary function in the gymnasium is to help pupils learn, then no improvement in the repertoire of pedagogy, research-based or not, will make the slightest long-term difference in their performance. We are dealing here with a value-based belief that defines the most fundamental terms of what it means to be a teacher. Without that singular intention, a person may look and act like a teacher, be paid as a teacher, even do many of the things that teachers do, but they are not in the most profound sense, teaching." (Locke, 1984, p. 5)

Lack of Expectations

One final thought about why skill teaching is so poorly done. This has to do with what is often referred to in the popular press as "touchy feely" courses. Every discipline has some. You all know what I mean. They came about as a result of the 60's revolution. Students rebelled at being treated like numbers and demanded, rightly so, that they be treated as sentient beings. They had feelings and each learner brought different sensitivities to the classroom and gymnasium. From my point of view, physical education teaching has benefited from this revolution. We needed to be less militaristic and to be more concerned about individual differences, but the pendulum may have swung too far. What I am referring to here are activity classes which I observe at

the high school and college level in which there are virtually no expectations in terms of skill attainment. As long as students come to class and "try", high grades are given; this may again sound contradictory if you recall what I said earlier about teaching too many skills in too short a period of time. My point here, however, is the same. We need to teach fewer skills, but have much higher expectations for our students. Generally speaking, we expect far too little of our students in physical education classes. The slow student is mostly ignored; the pygmalion effect then becomes reality. The slow student remains the slow student. On the other hand, poorly skilled students who are given additional help outside of class and who really "try" by practicing several hours in addition to coming to class make significant improvement. Of course, there are exceptions. Some students need remedial courses, just as some students need remedial math and English. Unfortunately, physical educators, in an attempt to escape the stereotype of the drill sergeant have often become social workers. In doing so, they fulfill a very real need in schools; they become the teacher in whom students confide their deepest feelings. To the detriment of the profession, however, they often neglect the aspect of their work for which they are getting paid--teaching physical education.

Most of my suggestions for improving the teaching of skills have already been covered. Let me just briefly reiterate the three problems as presented and mention a couple of additional suggestions for improving the situation.

Lack of Standardization

This problem needs to be addressed today! We need to establish through AAHPERD, a committee to determine (perhaps following the Red Cross model) criterion-referenced standards for sports skills. Of course, AAHPERD can not accomplish this task alone. Colleges and universities must become more involved with research pertinent to this problem and teacher preparation insti-

tutions must begin experimenting with criterion-referenced programs. Public school teachers who have been successful with criterion-referenced skills must publicize their efforts and continue to refine them. I am not naive enough to believe this will be an easy task, nor do I believe that everyone will agree with this approach. I do believe, however, that public school physical education is in desperate need of improvement and that providing teachers with criterion-referenced standards would be a giant step in the improvement process.

Lack of Teacher Preparation

Perhaps if we could solve this problem, skill teaching would no longer be deficient. Whether we like it or not, sport, dance and fitness activities are the foundation of our field. We should not be ashamed of that; rather we should exploit it. We should value skill teaching in our own departments. Good skill teachers should be cherished and rewarded with promotions and salary increases. In some schools this is not possible, perhaps, but I believe we have brought this on ourselves. In our desire to become academically accepted, we have neglected the reason we are in the schools. We have never done a good job with the basic skills of our profession and all of you know what happened to the pig who didn't build her house on solid ground.

It is my wish that teacher preparation programs would value the skill objective and would at the very least, recommend that only students who have demonstrated competence in personal and teaching skills in basketball, volleyball and softball be certified to teach. It is also my wish, that those of us who prepare teachers could give them a love for sport and a desire to teach physical skills. Donald Siegel, who teaches at Smith, apparently has these qualities. In his article, "I teach Squash," which was published in the Sep-

tember, 1984 issue of JOPERD, Siegel makes the reader aware of his love affair with squash and that he feels privileged to teach it.

Lack of Expectations

The third problem with the skill objective had to do with lack of expectations. The only other comments about this which I would like to make are that we need to stress what we know about teaching and learning. Insofar as teaching is concerned, we know that teachers must have something to teach, they must plan, they must keep students on task and they must work like the devil. In terms of learning, we know that it is hard work, requires hours of meaningful practice, is a lifetime proposition and that all learning rests with the learner. To paraphrase Galileo, You can not teach people anything; you can only help them to find it for themselves.

Review of Skill Related Literature in the Journal and Quarterly 1975-1985

In an effort to determine the status of skill in terms of what is being written about the subject, the Journal of Physical Education, Recreation & Dance and the Research Quarterly for Exercise and Sport were reviewed for the decade 1975-85. This section of the paper will be a discussion of that review. In order to organize the numerous research studies and articles which were skill related and published during this period, the material was categorized under the following headings: 1) role of performance in teacher training; 2) effect of teaching styles/methods on motor skill learning; 3) skill tests; 4) motor learning research using traditional sports; 5) motor learning research using novel tasks; 6) basic skills motor learning research; and 7) Journal feature articles on specific sports.

Role of Performance in Teacher Training

Although the Lawson and Pugh (1981) article (referred to earlier in this paper) was not soley concerned with performance as it relates to teacher training, it was a most thought provoking essay, and it certainly belongs under this category. The authors, however, make it very clear that they consider performance courses to be the basis of every physical education major's curriculum; it is not just a requirement for those preparing to teach. The following quote illustrates their position:

> "A certain measure of performance competence, however and whenever it is acquired, would be a prerequisite to disciplinary coursework. Just as performance courses in music bridges to art criticism, and performance courses in music bridge to music theory and composition, so too, can performance courses in physical education serve as bridges to performance analysis through disciplinary courses. In other words, performance courses provide the actual experience of performing, while disciplinary courses give a different understanding of performance. The one gives how-to knowledge, the other knowledge about. These two kinds of knowledge may be mutually exclusive, but surely an educated person in our field needs both. This link between performance and disciplinary courses is, thus, a bridge between C.P. Snow's Two Cultures. It is an aesthetic as well as a scientific and scholarly bridge." (Lawson and Pugh, 1981, p. 61)

Two other studies, Southland (1983) and Davis and Hopkins (1979) and one article (Lay, 1978) were found which examined the role of performance in the training of physical education majors. Davis, Hopkins, and Lay were strong advocates of increased emphasis on the development of skill among major students. The Southland research reported on the relationship of selected competencies in the preparation of physical education majors, as determined by the responses to a questionnaire of 546 physical educators responsible for teacher training. He found that pedagogy courses were considered less important than movement science courses and that coursework relating to teaching team and individual sports was lacking.

Three studies were found in the Research Quarterly for Exercise and Sport which should be of particular interest to instructors in teacher training

institutions who are working with major students in the area of skill analysis. Imwold and Hoffman (1983) and Armstrong and Hoffman (1979) reported (not surprisingly) that gymnastic specialists are more able to detect gymnastics errors and that experienced teachers are better at tennis error detection than less experienced tennis teachers. Biscan and Hoffman (1976) in an earlier study found that the ability to analyze skill was not necessarily a generic ability of physical education teachers.

Beverly Yerg (1981) presented an interesting study in which she applied the research on teaching effectiveness model to a physical education setting. Unfortunately, one of the findings was that the teacher's skill and knowledge of the cartwheel were not related to student learning. She did qualify this by mentioning that this finding contradicted other studies, and that the cartwheel was, perhaps, not a good learning task for this particular model.

Another study of interest in the area of teacher training was one by Hatfield and Landers (1978) which investigated the Pygmalion Effect. They found that observer expectancy did effect performance in the expected direction.

Other studies reviewed which were indirectly concerned with the skill emphasis in the preparation of physical education majors had to do with evaluation. Noble and Cox (1983) developed an instrument to evaluate teaching lifetime sports and most of the questions in the instrument dealt with skill. James Morrow (1978) reported on a study he had conducted to determine factors 29 student teachers at a major university used in assigning physical education grades. Findings indicated that dressing out and participation ranked one and two. Skill was in last place.

To conclude the review under this category, two articles published in JOPERD, which are relevant to the skill emphasis in the preparation of

teachers, will be mentioned. The first one was by De Canio (1979) and explained a program whereby majors teach skills to each other and included a checklist used by students to evaluate skill. The second study was by Landers (1978) and appeared in the research for practitioner section. It detailed the results of her research concerning the effectiveness of demonstrations. Her findings suggested that there should be frequent demonstrations by skilled performers, and that the demonstrations should be spaced so that the learner watches and practices intermittently.

Effect of Teaching Styles/Methods on Motor Skill Learning

Under this category, there were three studies which examined the effect of traditional vs. non-traditional styles of teaching on motor skill learning and other kinds of learning such as self concept (Goldberger, Gerney and Chamberlain, 1982; Martinek, Zaichkowsky and Cheffers, 1977; Thaxton, Rothstein and Thaxton, 1977). The three studies were similar in that the subjects were nine and ten year old boys and girls and all three reported that teaching style did not effect skill learning. The Martinek, Zaichkowsky and Cheffers study did indicate that the vertical style, defined as teacher directed, was best for skills and the horizontal style, student directed, best for self-concept. The Thaxton, Rothstein and Thaxton study was also interesting in that it reported that four week units consisting of two 50 minute periods per week is an appropriate time frame for teaching fourth grade girls the skills of gymnastics, tumbling and basketball, but there was no difference in learning in terms of traditional versus movement education teaching styles.

Only one other study which looked at teaching styles or methods could be found in the Quarterly for the 1975-85 period. This one by Philip Van Slooten and Marian Kneer (1976) compared three different methods of teaching handball

to college students. Findings revealed no differences in the three groups, which were traditional, contractual and independent learning situations.

There were four articles in JOPERD which were identified as dealing directly with teaching methods/styles. Two of these, Annarino (1983) and Kneer (1982) were most practical. They provided sample unit plans and gave suggestions for criterion-referenced standards. The other two JOPERD articles (Goldberger, 1984; Caskey, 1982) were more general but provided a good discussion of various teaching styles and the importance of teachers using a variety of styles.

Skill Tests

In reviewing the literature under this category, nine skill tests representing seven different sports were found in the Research Quarterly for Exercise and Sport for the 1975-85 period. They were as follows: archery (Shifflett and Schuman, 1982); basketball (Hopkins, 1977; Hopkins, 1979); field hockey (Chapman, 1982); football (McDavid, 1977); golf (Shick and Berg, 1983); racquetball (Hensley, East and Stillwell, 1979); and tennis (Purcell, 1981; Avery, Richardson and Jackson, 1979). All of the tests mentioned have the same weaknesses as most other tests; they lack validity and to a lesser extent reliability. Nonetheless, the archery test was particularly noteworthy since it is criterion-referenced.

One other interesting aspect about skill tests reported in the Quarterly is that people apparently scrutinize them carefully. For example, the racquetball test (Hensley, East and Stillwell, 1979) caused quite a stir. There were two responses published in the dialogue section of the Quarterly which raised questions about the test (Collins and Hodges, 1979; Karpman and Isaacs, 1979). The tennis serve test (Avery, Richardson and Jackson, 1979) was also questioned by McGehee (1981).

Insofar as skill tests reported in JOPERD are concerned, there were suggestions for testing in basketball (Hopkins, 1979); gymnastics (Hampton, 1978); and volleyball (Barker, 1985). The JOPERD presentations were excellent in that they were written so that the practitioner could easily apply them. The volleyball test deserves special mention here since 100 per cent of the grade was based on skill.

In addition to skill tests published in the JOPERD, the January, 1978 edition carried a section which featured quality school physical education at the secondary level. Among the articles in this feature was one on skill testing (Bobo, 1978) and one by Kneer (1978), which was not about skill testing per se, but did suggest physical education exit competencies for high school students in the affective, cognitive and psychomotor domain. Her psychomotor requirements were most interesting . According to Kneer, students graduating from high school should possess the ability to perform at least one sport activity, dance, aquatics, gymnastics and self-testing activity at the intermediate skill level and to perform the AAHPERD fitness test at the average level.

Motor Learning Research Using Traditional Sports

Fifteen motor learning studies were found in which traditional sports were included in the experiment; ten of these were reported in the Quarterly and five in the Journal. Of the Journal studies, two, (Rothstein, 1980; Israel, 1980), were included in a feature section dealing with research. Rothstein conducted a review of video tape replay studies. Among other findings, she reported that advanced beginners benefit from replays to a greater degree than beginners, and that for replays to be effective for beginners, there must be

several repetitions and meaningful cues. The Israel study summarized for the practitioner his research on base stealing which had been reported in the Quarterly. He suggested the cross-over and jab-step are equally efficient base running techniques.

The three other studies reported in JOPERD were also presented with the practitioner in mind. Lichtman (1984) provided information about the effectiveness of augmented proprioceptive feedback in the form of swim fins and hand paddles in teaching swimming; Young (1985) conducted a transfer study and found that giving bonus points in drills facilitated the transfer of skills to actual game situations; and Arnold (1978), in a discussion about enhancing skill learning, suggests that demands placed on learners for open and closed skills are very different and teachers should plan accordingly, and in addition, in terms of open skills, students should be placed in game situations as quickly as possible.

In the motor learning studies found in the Quarterly which used traditional sports in the experiment, tennis was the one most often used. Investigators of the three tennis studies reported the following: 1) no difference in tennis skill and knowledge of college women who practiced under three different conditions (Lindquist and Witte, 1977); 2) high school female students learn the serve and ground strokes best when provided with performance and environmental feedback (Cooper and Rothstein, 1981); and 3) with college men and women, the group taught the volley method first improved significantly on the forehand drive as measured by the Broer-Miller test (Burrus-Bammell, 1976).

There were two motor learning studies concerned with baseball. Israel (1976) advocated a sprinter's start for base stealing, but the practicality of this research was questioned by Stranak (1977). The Spieth (1977) experiment was less controversial. He found that using a surrogate pitcher was more

beneficial in teaching fundamental skills to eight and nine year old children. Incidentally, one reason given for this was that it developed more confidence because fewer batters were hit.

Golf was the sport studied in investigations by Meacci and Price (1985) and Skrinar and Hoffman (1978). The latter study found that the golfer's groove, a mechanical device used as an instructional aid, did not improve skill test scores when compared to students who did not use the device. The Meacci and Price study was concerned with putting. Their findings revealed that college men and women who learn to putt using relaxation, visualization and body rehearsal techniques retain significant learning levels.

In a practice distribution study involving the kip and hip circle, Kleinman (1976) reported no difference in learning these skills in terms of practice distribution.

Other traditional sports used to investigate various aspects of motor learning were archery and basketball. In the archery study, Barnett and Stanicek (1979) indicated that a goal setting group produced higher scores than non-goal setting students. Meyers, Schleser and Okwumabua (1982), in their basketball research, came to the tentative conclusion that the performance of female college players may be improved by employing relaxation, imagery and self-instruction strategies.

Motor Learning Research Using Novel Tasks

As you might suspect, all studies in this category were published in the Quarterly. You will also not be surprised to learn that the novel tasks most often used in these experiments were the pursuit rotor and juggling. Of the 13 studies reviewed under this heading, the pursuit rotor was the novel task in six (Anshel, 1979; Bennett, Vincent and Johnson, 1979; Dunham, 1977; Jensen,

1975; Kieffer, 1977; Sage and Hornak, 1978), and juggling was used in three studies (Anshel and Singer, 1980; Barnett, 1977; Murray, 1979). About the only thing to be said about these studies, if you will forgive my non-intellectual view, is that the last pursuit rotor study was published in 1979, and the last juggling one in 1980. (I was very sorry that juggling had survived into the 80's. It was my hope that such studies would have died a natural death by, at least, 1979.)

The four remaining motor learning studies used, for the most part, some type of motor learning apparatus especially constructed for the investigations. Two of the experiments (Singer and Pease, 1976; Singer and Pease, 1978) dealt with teaching styles, but the study was so esoteric that I found it difficult to interpret the results.

The remaining motor learning study which used a novel task was by Shapiro (1977); she used a linear positioning device to determine the effect of knowledge of results on motor learning in preschool children. She found that the most precise KR condition showed fewer errors.

Basic Skills Motor Learning Research

In reviewing the literature dealing with skill, one area which was of particular concern to me was to look at what was being published in regard to basic skills, particularly throwing and catching. In terms of throwing, six studies were found. They follow: 1) Austin (1975) in a study of throwing velocity of third grade girls found that those who participated in distributed practice situations were able to throw with greater speed; 2) Halverson, Robertson, Safrit and Roberts (1977) found no difference in the velocity of the overhand throw of kindergarten children regardless of treatments. They also found, to my chagrin, that kindergarten boys threw with greater velocity than

did girls; 3) in a more recent study by Halverson, Roberton, and Langendorfer (1982) similar findings were also reported. They conducted a longitudinal study and found that the gap between the sexes, in terms of throwing velocity, increased throughout elementary school. By the seventh grade, the girls were five developmental years behind the boys. Self-reports, it should be added, indicated that boys had more throwing experience than girls; 4) Shick (1975) examined throwing accuracy as it related to target color. With college women as subjects, she reported that target color made no difference in throwing accuracy; 5) Railey (1976) was interested in the transfer effects of throwing with the nondominant hand. His findings indicated that throwing a baseball with the nondominant hand can be improved in a short period of time; and 6) Safrit, Stamm, Russell and Sloan (1977) investigated the environmental and order of testing effects on velocity of the overhand throw of college women. They found no order of testing effects, but did indicate that women who threw inside the gymnasium threw with greater speed.

Other basic skill studies involved ball catching (Morris, 1976; MacGillivary, 1979) and batting (Ridenour, 1977). These three studies used elementary school children as subjects and appeared to be well designed, but none provided definitive answers to factors contributing to catching and striking ability.

Journal Feature Articles on Specific Sports

In the last category of this review, special Journal feature sections which highlighted specific sports will be mentioned. As you know, every Journal publishes several articles which provide suggestions for teaching specific sports; therefore a complete review of all such articles is beyond the scope of this paper. However, during the 1975-85 decade, the Journal published

several excellent sport features which I would like to call to your attention. They were: basketball (Gudger and Barnes, eds., 1983); gymnastics (Johnson, ed., 1985); soccer (Krottee, ed., 1981) and tennis (Kraft, ed., 1979). In addition, there was a short section devoted to tennis coaching (Gellen, ed., 1981) and a comprehensive treatment of racquet sports which included techniques for teaching racquetball, tennis, badminton, and platform tennis (Zebos and Groppel, eds., 1983).

Incidentally, in reviewing Journal articles, I must share with you one which was particularly intriguing to me. It was titled "Catapultry: A Sport for the 80's." Catapultry, I assumed, was a form of gymnastics, but upon reading the article, I was surprised to learn that catapultry is actually shooting a slingshot. I also learned that there is a National Catapultry Association and that catapultry was chosen as the name because of the undesirable connotation of the slingshot. This may very well be the sport of the 80's. At least it tells us a lot about our field as well as society in general during this particular decade.

Summary of the Literature Review

In an effort to show a relationship between the literature review and the reasons given for poor skill teaching (lack of standardization, lack of teacher preparation and lack of expectations), two final transparencies will be shown. They represent the most pertinent articles/studies of all those reviewed which have implications for these problems. Since all of these references have been discussed under other categories, I will not go into detail here. Let it suffice to say that much is being written which would, if put into practice, improve teacher preparation in terms of the skill objective, but insofar as the other two trouble spots, lack of standardization and lack of expectations, the amount of published material is scant. Much more is needed.

In summary, the review section confirmed my feelings about the skill objective. The teacher preparation information revealed that we as a profession have not reached consensus about training physical education majors in terms of performance standards. Further, the material related to methods/teaching styles and basic skills indicated that much more research is needed to determine the most effective methods and styles for teaching traditional sports as well as basic skills.

The research on traditional and novel tasks, from my perspective, is very encouraging in that attempts are being made to interpret the motor learning research to the practitioner and only one study using a novel task (Anshel and Singer, 1980) could be found for the first five years of the 1980's. Incidentally other encouraging signs about research reviewed in the Quarterly during this time period were that many of the subjects were children, even female children, and more and more of the investigators themselves were women.

In terms of the skill testing research, it still, in my opinion, leaves much to be desired. Perhaps we would be better to rely on rating sheets and checklists to determine skill scores rather than on testing isolated skills. Shick and Berg (1983, p. 83) expressed this view in a discussion of their golf skill test for junior high school boys. They stated, "The best measure of golf performance is actual golf scores."

The technique articles appearing in the Journal generally offer excellent suggestions for teaching particular sports. These should be of great help to the practitioner. It would also, it seems to me, be most beneficial to publish more articles which present sample unit plans which have actually been successfully taught. These should provide details about progressions, length of unit and grading procedures. My number one suggestions, you may have guessed , is that the JOPERD publish a special feature on criterion-referenced testing.

CRITERION-REFERENCED STANDARDS FOR BASKETBALL, VOLLEYBALL AND TENNIS

The third section of this paper deals with criterion-referenced standards for the sports of basketball, volleyball and tennis. Those of you who are swimming teachers will notice from the hand-outs and transparencies that the format of the skill sheets has been adapted from those provided by the American Red Cross for swimming courses.

Let me give you a little information about the development of these particular skill sheets. First of all, skills necessary for a complete player in the various sports were listed and then the skills were placed at either level 1, 2, or 3. This process was based on my own experience, the experience of my students and colleagues, and information found in textbooks and articles dealing with basketball, volleyball and tennis skills. The criterion at which each skill was to be performed was determined in the same way and in addition some data was collected from high school and college physical education classes. This approach is acceptable according to Safrit et al (1980). They suggest that criterion-referenced standards may be selected on the basis of scientific evidence, intuition, experience, or a combination of these.

The volleyball transparency, as you can see, is divided into skills appropriate for level 1, 2, and 3 and gives specific criteria for skills at the various levels. As mentioned earlier, I am sure not everyone will agree with the skills and the number of repetitions listed for each level; that is really of no consequence to this discussion since the intent is not to establish absolute numbers of repetitions for each skill, but rather to suggest that these skills and this number of repetitions are feasible at these levels based on data collection and suggestions in the literature.

My position is that physical education teachers could utilize this type of teaching aid, and based on their own data collection in their particular situation, alter the number of repetitions. Just as swimming teachers vary their approach to teaching swimming, volleyball, basketball and tennis teachers would certainly not adhere strictly to these suggestions on these sheets, but it would be, in my opinion, a wonderful step in the right direction if we as a profession could reach some consensus about skills and expectations at the various levels.

As indicated in the transparency, the volleyball skills at level 1 are the overhand or set pass, the forearm or bump pass and the underhand serve. You will notice that specific repetitions for each of those skills is listed and that students would have to demonstrate in a game situation five good bump passes, five good sets, 5 good serves and court coverage for basic offensive and defensive strategies.

For level 2 in volleyball, the basic skills of overhand and bump passing are still emphasized with the number of repetitions increased considerably. The new skills added for this level are the overhand serve, dig, spike, and block. Offensive and defensive strategies are also more complex for this level.

Level 3 volleyball, as you can see, includes only one new skill, the dink, but the number of consecutive repetitions for the other skills are fairly demanding. The offensive and defensive strategies are also more complicated.

The basketball skill sheets also illustrate skills which are progressive from level 1 to level 3. At level 1, as you will notice, the student is expected to master, according to specific criteria, lay-ups, set shots, jump shots, dribbling and passing and to demonstrate in game situations player-to-player and rebounding defensive skills as well as give and go offensive techniques and

offensive rebounding. At levels 2 and 3 the basic skills criteria are more demanding and additional shooting, passing and dribbling skills are added. The offensive and defensive strategies are also more complicated as the transparencies indicate.

Tennis is the final skill transparency. You will note that this is set-up like the basketball and volleyball skill sheets, but the criterion for each skill may be somewhat different. For example, to satisfy the criterion for some of the skills, the student may have to hit 8 of 12 lobs rather than 12 consecutive ones. Criterion for other skills may involve simply having the student rally for a certain amount of time.

Please allow me to reiterate that there may be lack of agreement about my suggested criteria for skill mastery, but I do hope you appreciate and understand the intent. As Popham (1978) pointed out, some people have thrown out standard setting because standards are set arbitrarily. Popham's position, as is mine, is that although standard setting by its very nature involves human judgment, serious efforts at standard setting should be applauded because they represent genuine attempts in determining what standards we ought to strive for. Please consider my attempts at standard setting as serious! And on that happy note, I will conclude my presentation. Thank you for your patience.

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WORKSHEET FOR: VOLLEYBALL

NAME OF COURSE	LEVEL	DATE STARTED	COMPLETED	INSTRUCTOR

— SKILLS FOR COURSES ARE LISTED ON REVERSE SIDE

— SKILLS MAY BE WRITTEN IN SPACE PROVIDED OR CHECKED BY NUMBER.

PARTICIPANT'S NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	GRADE
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TESTING SKILLS

PROGRESSIVE VOLLEYBALL SKILLS

LEVEL 1

PASSING
1. Demonstrate correct body and arm position for overhand pass (set)
2. Demonstrate correct body and arm position for forearm pass (bump)

OVERHAND PASSING SKILLS--minimum net height
3. Set to self--10 consecutive times
4. Set to partner--20 consecutive times

FOREARM PASSING SKILLS--minimum net height
5. Bump Pass to self--10 consecutive times
6. Bump Pass against wall--15 consecutive times (6 feet from wall)

SERVES
7. 5 consecutive good underhand serves

DEMONSTRATE IN GAME SITUATION
8. Positioning and stance for serve reception
9. Court coverage for 3-hit volleyball offense
10. 5 good serves
11. 5 good bumps
12. 5 good sets

LEVEL 2

OVERHAND PASSING
1. Set to self--15 consecutive times
2. Set to partner--30 consecutive times
3. Set 180 degree turn-set to partner--10 consecutive times

FOREARM PASSING
4. Bump Pass to self--15 consecutive times
5. Bump Pass against wall--20 consecutive times (6 feet from wall)

SERVES
6. 10 consecutive underhand serves
7. 5 consecutive overhand serves

SPIKE AGAINST WALL--minimum 15 feet from wall
8. 10 consecutive spikes
9. Demonstrate control and spike over net--alternate bump and set (3 of each) spike over net

DEMONSTRATE IN GAME PLAY--60 percent success rate
10. Overhand pass
11. Bump pass
12. Spike
13. 1 person block positioning/coverage
14. Court in 4-2 offense
15. Court/positioning in spike coverage against 4-2 offense
16. Court position on free-ball play
17. Basic serve reception--Front-line players switch

LEVEL 3

OVERHAND PASSING
1. Set to self--20 consecutive times
2. Set to partner--60 consecutive times
3. Set to self, 180 degree turn, set to partner--15 consecutive times
4. Back set (3 person drill)--15 consecutive times

FOREARM PASSING
5. Bump pass to self--20 consecutive times
6. Bump pass against wall--30 times (6 feet from wall)

SERVES
7. 15 consecutive overhand serves
8. Demonstrate one successful roundhouse serve

SPIKE AGAINST WALL--minimum 15 feet from wall
9. 20 consecutive spikes
10. Demonstrate control and spike over net--alternate bump and set (3 of each) spike over net

DEMONSTRATE IN GAME PLAY--75 percent success rate
11. Overhand pass
12. Bump pass
13. Spike
14. Block--1, 2, 3 person
15. Dink
16. Court coverage/positioning in combination 4-2 and 6-0 offensive patterns
17. Spike coverage/positioning against 6-0 offensive pattern

REFERENCE TEXT: SLAYMAKER, THOMAS AND VIRGINIA H. BROWN.
POWER VOLLEYBALL. (Third Ed.), NEW YORK: SAUNDERS, 1983

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DEPARTMENT OF PHYSICAL EDUCATION AND DANCE

WORKSHEET FOR: TENNIS

NAME OF COURSE	LEVEL	DATE STARTED	COMPLETED	INSTRUCTOR

— SKILLS FOR COURSES ARE LISTED ON REVERSE SIDE

— SKILLS MAY BE WRITTEN IN SPACE PROVIDED OR CHECKED BY NUMBER.

PARTICIPANT'S NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	GRADE
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TESTING SKILLS
PROGRESSIVE TENNIS SKILLS

LEVEL 1

FOREHAND STROKE (Independent Skills)
1. Demonstrate Eastern Forehand Grip
2. Demonstrate the forehand stroke (with pivot, but without hitting ball)
3. Self-drop and hit forehand against wall 15 feet away--25 times
4. Self-drop and hit forehand against wall 15 feet away above 3 foot line--20 times
5. Repeat no. 4 with consecutive forehand strokes--10
6. On court, behind baseline, self-drop and hit forehand to baseline--20 times

FOREHAND STROKE (Partner Skills)
7. Partner Toss-Forehand drive to right half of opponent's back court--10
8. Partner Toss-Forehand drive to left half of opponent's back court--10
9. Forehand Rally with partner--5 consecutive hits
10. Forehand Rally with partner--5 minutes

BACKHAND STROKE (Individual Skills)
11. Repeat 1-10 using backhand stroke

SERVE
12. Ball toss for serve--10 times
13. Ball toss for serve--simulate serve (do not contact ball)--10 times
14. Flat serve into right service court--20
15. Flat serve into left service court--20

DEMONSTRATE IN MATCH PLAY
16. Singles Strategy
17. Doubles Strategy
18. Forehand Drive
19. Backhand Drive
20. Serve

LEVEL 2

FOREHAND STROKE
1. Backboard Rally--50 consecutive forehand drives
2. Partner Toss--Forehand drives cross court--20
3. Partner Toss--Forehand drives right half of opponent's back court--20
4. Partner Toss-Forehand drive left half of opponent's back court--20
5. Forehand Rally with partner--10 minutes

BACKHAND STROKE
6. Repeat nos. 1 through 5 using backhand

VOLLEY
7. Partner Toss--Forehand Volley--15
8. Partner Toss--Backhand Volley--15
9. Partner Toss--alternate forehand and Backhand Volley--15 of each
10. At the net, partner volley consecutively without ball touching ground--8 times

LOB
11. Bounce ball and hit forehand lobs to opponent's baseline--8 of 12
12. Bounce ball and hit backhand lobs to opponent's baseline--8 of 12
13. Bounce ball alternate forehand and backhand lobs--8 of 12 each side
14. Partner toss ball--forehand lob to opponent's baseline--8 of 12
15. Partner toss ball-backhand lob to opponent's baseline--8 of 12

SMASH
16. Partner toss short high lobs, smash to right corner of opponent's court--12 of 20
17. Repeat 16, smash to left corner--12 of 20

SERVE
18. Flat serve into right and left service courts--20 good ones to each court
19. Slice serve into right and left service courts--20 good ones to each court

DEMONSTRATE IN MATCH PLAY
20. Singles Strategy
21. Doubles Strategy
22. Forehand
23. Backhand
24. Lob
25. Smash
26. Flat Serve
27. Slice Serve

LEVEL 3

FOREHAND STROKE
1. Backhand Rally--75 consecutive forehand drives
2. Forehand Rally with partner--15 minutes
3. Partner Toss--forehand drives with top spin--20

BACKHAND STROKE
4. Repeat 1-3 using backhand

VOLLEY
5. At the net, partners volley consecutively with ball touching ground--12 times

LOB
6. Lob with partner--baseline to baseline--16 of 20

SMASH
7. Smash from ball hit by partner--16 of 20

SERVE
8. Flat Serve--30 good ones in each court
9. Slice Serve--30 good ones in each court

DEMONSTRATE IN MATCH PLAY
10. Singles Strategy
11. Doubles Strategy
12. Forehand Drive flat and top spin
13. Backhand Drive flat and top spin
14. Lob
15. Smash
16. Half-Volley
17. Drop Shot
18. Flat Serve
19. Slice Serve

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DEPARTMENT OF PHYSICAL EDUCATION AND DANCE

WORKSHEET FOR: BASKETBALL

NAME OF COURSE	LEVEL	DATE STARTED	COMPLETED	INSTRUCTOR
— SKILLS FOR COURSES ARE LISTED ON REVERSE SIDE — SKILLS MAY BE WRITTEN IN SPACE PROVIDED OR CHECKED BY NUMBER.				GRADE

PARTICIPANT'S NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
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TESTING SKILLS
PROGRESSIVE BASKETBALL SKILLS

LEVEL 1

SHOOTING

LAY-UPS--Dribbling from the free throw distance
1. Front--5 consecutive
2. Right--5 consecutive
3. Left--5 consecutive

LAY-UPS--Shooting without dribble (after receiving pass on run)
4. Front--5 consecutive
5. Right--5 consecutive
6. Left--5 consecutive

FREE THROWS
7. 5 consecutive

JUMP SHOTS
8. 2 consecutive at 45 degree angle left (free throw distance)
9. 2 consecutive at 45 degree angle right (free throw distance)
10. 2 consecutive off the dribble at 45 degree angle left (free throw distance)
11. 2 consecutive off the dribble at 45 degree angle right (free throw distance)

DRIBBLING
12. Dribble length of court using preferred hand
13. Dribble length of court using non-preferred hand
14. Dribble length of court using alternate hands

PASSING--On the run with partner
15. 5 consecutive good two hand chest passes
16. 5 consecutive good bounce passes
17. 5 consecutive good underhand passes

DEMONSTRATE IN GAME SITUATION
18. Defensive rebounding (boxing out)
19. Offensive rebounding (follow through)
20. Player-to-Player defensive strategy
21. Free lance offensive strategy

LEVEL 2

SHOOTING

LAY-UPS--dribbling from the free throw distance
1. Front--10 consecutive
2. Right--10 consecutive
3. Left--10 consecutive

LAY-UPS--Shooting without dribble (after receiving pass on run)
4. Front--10 consecutive
5. Right--10 consecutive
6. Left--10 consecutive

FREE THROWS
7. 10 consecutive

JUMP SHOTS
8. 5 consecutive at 45 degree angle left (free throw distance)
9. 5 consecutive at 45 degree angle right (free throw distance)
10. 5 consecutive off the dribble at 45 degree angle left (free throw distance)
11. 5 consecutive off the dribble at 45 degree angle right (free throw distance)

DRIBBLING
12. Change-of-pace dribble length of court
13. Crossover dribble length of court
14. Reverse dribble length of court

PASSING--figure eight drill
15. 10 consecutive two hand chest passes
16. 10 consecutive bounce passes
17. 10 consecutive underhand passes
18. 10 consecutive one-hand passes

DEMONSTRATE IN GAME SITUATION
19. One type of zone defense
20. Player-to-Player defense
21. Fast break offense
22. One type player to player offense
23. One type of zone offense

LEVEL 3

SHOOTING

LAY-UPS--dribbling from the free throw distance
1. Front--15 consecutive
2. Right--15 consecutive
3. Left--15 consecutive
4. Inverted--5 consecutive
5. Reverse--5 consecutive

LAY-UPS--Shooting without dribble (after receiving pass on run)
6. Front--15 consecutive
7. Right--15 consecutive
8. Left--15 consecutive

FREE THROWS
9. 15 consecutive

JUMP SHOTS--Free throw distance
10. 10 consecutive at 45 degree angle left
11. 10 consecutive at 45 degree angle right
12. 10 consecutive off the dribble at 45 degree angle left
13. 10 consecutive off the dribble at 45 degree angle right

DRIBBLE--Demonstrate proficiency
14. Behind the back
15. Between the legs

PASSING--Figure Eight Drill
16. 15 consecutive two hand chest passes
17. 15 consecutive bounce passes
18. 15 consecutive underhand passes
19. 15 consecutive one-hand passes

PASSING to a target--20 foot distance
20. 5 consecutive hook passes
21. 5 consecutive lob passes

DEMONSTRATE IN GAME SITUATION
22. Player-to-Player defense
23. 2 different zone defenses
24. Zone press
25. Fast break offense
26. Set offenses for player-to-player and zone defenses

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Reasons for Poor Skill Teaching

1. Lack of Standardization
2. Lack of Teacher Preparation
3. Lack of Expectations

Categories of Skill Related Literature Published in the Journal of Physical Education, Recreation & Dance and the Research Quarterly for Exercise and Sport 1975-1985

1. Role of Performance in Teacher Training
2. Effect of Teaching Styles/Methods on Motor Skill Learning
3. Skill Tests
4. Motor Learning Research Using Traditional Sports
5. Motor Learning Research Using Novel Tasks
6. Basic Skills Motor Learning Research

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Great Expectations

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